REMARKS

STATUS OF CLAIMS:

Claims 1-13 have been pending.

Claims 1-3, 6 and 11-13 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Kelly, Julia (book titled "Using Microsoft Excel 2000," ISBN: 0789718626, hereinafter referred to as "Kelly," in view of Eick et al., U.S. Patent No. 5,598,703, hereinafter referred to as "Eick."

Claims 4-5 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Kelly, in view of Eick and further in view of Jou et al., U.S. Patent Publication No. 2003/0071814, hereinafter referred to as "Jou."

Claims 7-9 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Kelly, in view of Eick and further in view of Misue et al., U.S. Patent No. 5,764,239, hereinafter referred to as "Misue."

Claim 10 is rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Kelly, in view of Eick and further in view of Segawa, U.S. Patent Publication No. 2002/0032037, hereinafter referred to as "Segawa."

In accordance with the foregoing, claims 7 and 8 are cancelled without disclaimer or prejudice, new claim 15 is added and the claims are amended, and, thus, the pending claims remain for reconsideration, which is respectfully requested.

No new matter has been added.

The Examiner's rejections are respectfully traversed.

35 U.S.C. § 103(a) REJECTIONS:

Independent claims 1, 12 and 13 are allegedly unpatentable over Kelly in view of Eick.

In accordance with the foregoing, claims 1, 12 and 13 are amended, incorporating the features of dependent claims 7 and 8.

Applicants respectfully submit that a prima facie case of obviousness cannot be based upon Kelly, Eick and Misue, or any combination thereof, because Kelly Eick and Misue fail to disclose or suggest setting a spring force according to the degree of association. In other words, Kelly, Eick and Misue fail to disclose or suggest to one skilled in the art the claimed "virtual spring force, which changes according to distance, is defined between a display position for the

arranged keyword and a reference point for an axial label to which the arranged keyword has a relationship, a location, where spring forces acting at the display position for the arranged keyword are balanced, is set as a display position for the arranged keyword, and as the degree of association between the arranged keyword and the axial label increases, the virtual spring force becomes stronger," as recited, for example, in claim 1.

The Examiner, in rejecting claim 8, relies upon Eick, at column 12, lines 36-44, which discusses:

> Minimization methods are also known as force-based algorithms, as they are equivalent to releasing a set of nodes under a system of inter-node forces and letting them find an equilibrium layout. A common example of such an algorithm is to model the nodes as having springs attached between them, the strength of each spring being proportional to the size of the corresponding link. Some repulsive force between nodes is also required to prevent the nodes from coalescing.

Thus Eick discusses "the strength of each spring being proportional to the size of the corresponding link." However, the size of the link is different from the degree of association, because Eick merely discusses a force-based algorithm wherein a set of forces are defined for a set of nodes and the algorithm finds an equilibrium layout.

The Office Action, in rejecting claim 7, acknowledges that Kelly and Eick do not teach the claimed "virtual spring force, which changes according to distance, is defined between a display position for the arranged keyword and a reference point for an axial label to which the arranged keyword has a relationship, a location, where spring forces acting at the display position for the arranged keyword are balanced, is set as a display position for the arranged keyword," as recited, for example, in claim1.

The Office Action, at page 7, relies upon Misue, at column 3, lines 1-14, to disclose the same. Applicants respectfully disagree, because Misue, at column 2, line 45 to column 3, line 14, discusses:

> The objects of the present invention are to lay out arrow and non-arrow edges of a mixed type of graph, for example, in accordance with different rules, to lay out a plurality of kinds of edges in an arrow or non-arrow graph, in accordance with their respective different rules, and **to find a stable state of the physical model wherein the edges are represented by magnetic springs** having the properties of azimuth magnetic needles, for example.
>
> Forces acting on edges are defined to control the direction of each edge, these defined forces are incorporated, and a physical model corresponding to a graph which is obtained as a result of expressing the edges as magnetic springs having the properties of

> azimuth magnetic needles and springs, for example, placed in virtual magnetic field, is realized.
>
> When edges are expressed by magnetic springs, for example, the force acting on the edges is a rotational force created by the magnetic field, and a physical model in which this rotation and attraction or repulsion is created by the action of springs, is prepared.
>
> A stable state of the physical model is found by progressively repeating the correction of position of each node in the physical model, and a graph is then drawn or displayed, corresponding to this stable state of the physical model.
>
> **According to the above-described force directive method, a physical model was prepared by defining attraction and repulsion acting between the nodes, and when a stable state of the model was found, the layout of a graph was determined**. In contrast, the present invention is particularly characterized in that the forces acting on edges of a graph are defined upon preparing a physical model. When forces for a particularly rotation acting on edges are defined, as described above, the direction of each edge can be controlled, which is difficult using the conventional force directive method in which only forces acting between nodes were defined.

(emphasis added)

In other words, Misue discusses a physical model defining attraction and repulsion acting between the nodes, and finding a stable state of the model. Accordingly, Applicants respectfully submit that Misue discusses a force-based algorithm, similar to the force-based algorithm of Eick, which the Office Action acknowledges, fails to disclose the claimed "<u>virtual spring force, which changes according to distance, is defined between a display position for the arranged keyword and a reference point for an axial label to which the arranged keyword has a relationship, a location, where spring forces acting at the display position for the arranged keyword are balanced, is set as a display position for the arranged keyword</u>," as recited, for example, in claim 1. Accordingly, Applicants respectfully submit that Misue fails to teach or disclose the same for similar reasons.

Therefore, Applicants respectfully submit that a prima facie case of obviousness cannot be based upon Kelly, Eick and Misue, or any combination thereof, because Kelly Eick and Misue fail to disclose or suggest to one skilled in the art setting a spring force according to the degree of association. In other words, Kelly, Eick and Misue fails to disclose or suggest to one skilled in the art the claimed "<u>virtual spring force, which changes according to distance, is defined between a display position for the arranged keyword and a reference point for an axial label to</u>

which the arranged keyword has a relationship, a location, where spring forces acting at the display position for the arranged keyword are balanced, is set as a display position for the arranged keyword, and as the degree of association between the arranged keyword and the axial label increases, the virtual spring force becomes stronger," as recited, for example, in claim 1.

One benefit of the embodiment according to claim 1, for example, is that by setting a spring force according to the degree of association, an arranged keyword can be displayed at an appropriate position according to the degrees of association between the arranged keyword and plural axial labels.

NEW CLAIM:

Applicants respectfully submit that no reference, cited in the Office Action, discloses that the inverse number of the degree of association is taken as the natural length of a spring. By this feature, a position of displaying an arranged keyword is determined according to the absolute values of the degrees of association.

In one embodiment, for example, in the case where only a spring force (spring coefficient) is adjusted according to the degree of association, the position of an arranged keyword is determined according to the ratios of the degrees of association with respect to axial labels. For example, consider the case where there are the first to fifth axial labels. A position where spring forces are balanced is the same in the cases where the degrees of association between an arranged keyword and the axial labels are (0.2, 0.1, 0.1, 0.1, 0.1) and where the degrees of association between an arranged keyword and the axial labels are (1, 0.5, 0.5, 0.5, 0.5). This is because they have the same ratios of (2:1:1:1) in the degrees of association.

On the other hand, in the case where the inverse number of the degree of association is taken as the natural length of a spring, forces are balanced at a position according to the sizes of the absolute values of the degrees of association, rather than according to the ratios in the degrees of association. That is to say, the position of an arranged keyword having low degrees of association with respect to all axial labels is near to the center of the radar chart. This is because the arranged keyword is attracted by the springs having long natural lengths from the reference points of the axial labels. On the other hand, an arranged keyword having high degrees of association with respect to all axial labels is displayed at a position within a wider area of the radar chart. This is because the arranged keyword is attracted by the springs having short natural lengths from the reference points of the axial labels. For example, consider the case where there are the first to fifth axial labels. An arranged keyword in the case where the

degrees of association between an arranged keyword and the axial labels are (1, 0.5, 0.5, 0.5, 0.5) is displayed nearer to the first axial label, than that in the case where the degrees of association are (0.2, 0.1, 0.1, 0.1).

Therefore, by setting the inverse number of the degree of association as the natural length of a spring, differences in the sizes of the absolute values of the degrees of association between an arranged keyword and axial labels can be represented by the position of an arranged keyword on the radar chart, even if the ratios of the degrees of association are identical.

Accordingly, Applicants respectfully submit that new claim 15 claim recites patentably distinguishing features of its own or is at least patentably distinguishing due to its dependence from independent claim 1. Support for claim 15 can be found, for example, at page 37, line 22 to page 38, line 5, of the specification.

CONCLUSION

It is respectfully submitted that the foregoing has demonstrated that claims patentably distinguish over the references and rejections of record.

In view of the amendments and remarks presented above, there being no further outstanding objections or rejections, it is respectfully submitted that the application is in condition for allowance, and withdrawal of the rejection of pending claims and allowance of pending claims is respectfully requested. An early action to that effect is courteously solicited.

If there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

STAAS & HALSEY LLP

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By:
Matthew H. Polson
Registration No. 58,841

1201 New York Ave, N.W., 7th Floor
Washington, D.C. 20005
Telephone: (202) 434-1500
Facsimile: (202) 434-1501